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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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David J. Kubista

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EXAMINER

ZERVIGON, RUDY

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,458

Applicant(s)

KUBISTA ET AL.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitt; John Vincent et al. (US 6,402,806 B1) in view of Aral; Gurcan (US 6,022,483 A). Schmitt teaches Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) for depositing material onto Schmitt's workpiece ("substrate"; column 1, lines 17-25) in Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) comprising: Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's mainline (503; Figure 5) coupled to Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's mainline (503; Figure 5) having Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's second trap (513; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's second branchline (between 503 and 509; Figure 5) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to determine a pressure difference between a pressure in Schmitt's mainline (503;

Art Unit: 1763

Figure 5) upstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and Schmitt's pressure in Schmitt's mainline (503; Figure 5) downstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's mainline (503; Figure 5) – claim 16

Schmitt further teaches:

- i. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 16 wherein: Schmitt's mainline (503; Figure 5) further includes Schmitt's third branchline (between 511 and "Pump"; Figure 5) and Schmitt's fourth branchline (between 517 and "Pump"; Figure 5) each downstream from Schmitt's first and second branchlines; Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's third branchline (between 511 and "Pump"; Figure 5) - claim 18
- ii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) for depositing material onto Schmitt's workpiece ("substrate"; column 1, lines 17-25) in Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) comprising: Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's mainline (503; Figure 5) coupled to Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's mainline (503; Figure 5) having Schmitt's first branchline (between 503 and 507; Figure 5) and Schmitt's second

Art Unit: 1763

branchline (between 503 and 509; Figure 5) each downstream from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's second trap (513; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's second branchline (between 503 and 509; Figure 5) to collect byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28), Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) to determine a pressure difference between a pressure in Schmitt's mainline (503; Figure 5) upstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and a pressure in Schmitt's mainline (503; Figure 5) downstream from Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28); Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's mainline (503; Figure 5); – claim 20

- iii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 20 wherein: Schmitt's mainline (503; Figure 5) further includes Schmitt's third branchline (between 511 and "Pump"; Figure 5) and Schmitt's fourth branchline (between 517 and "Pump"; Figure 5) each downstream from Schmitt's first and second branchlines; Schmitt's vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) comprises Schmitt's first vacuum pump ("Pump"; Figure 5; column 6, line 7 - column 7, line 28) coupled to Schmitt's third branchline (between 511 and "Pump"; Figure 5) - claim 22

Art Unit: 1763

Schmitt does not teach:

- i. a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5) – claim 16, 20
- ii. a controller operably coupled to Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) and a throttling valve, a controller having a computer-readable medium containing instructions that cause the controller to perform Schmitt's method comprising--exhausting byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28) through the first trap (501; Figure 5; column 6, line 7 - column 7, line 28) in the first branchline (between 503 and 507; Figure 5); determining the pressure difference across the first trap (501; Figure 5; column 6, line 7 - column 7, line 28) caused by a flow of the byproducts by monitoring the Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28); dynamically controlling Schmitt's flow of byproducts into the second trap (513; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's second branchline (between 503 and 509; Figure 5) by regulating the throttling valve; and to maintaining Schmitt's pressure differential across the first trap in Schmitt's mainline (503; Figure 5) based on the determined pressure difference - claim 16
- iii. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises a second vacuum pump coupled to Schmitt's fourth branchline (between 517 and "Pump"; Figure 5) - claim 18, 22.
- iv. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 16 wherein a throttling valve comprises Schmitt's first valve (505; Figure 5;

Art Unit: 1763

column 6, line 7 - column 7, line 28), and wherein Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises Schmitt's second valve (511; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5) upstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and a third valve in Schmitt's first branchline (between 503 and 507; Figure 5) downstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 19

- v. a controller operably coupled to Schmitt's pressure monitor (519; Figure 5; column 6, line 7 - column 7, line 28) and a throttling valve, a controller having a computer-readable medium containing instructions that cause the controller to perform Schmitt's method comprising--exhausting byproducts from Schmitt's reaction chamber (521; Figure 5; column 6, line 7 - column 7, line 28) through Schmitt's branchline; collecting byproducts in Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5); monitoring Schmitt's difference between Schmitt's pressure in Schmitt's mainline (503; Figure 5) upstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and Schmitt's pressure in Schmitt's mainline (503; Figure 5) downstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28); and regulating a throttling valve in Schmitt's second branchline (between 503 and 509; Figure 5) in response to Schmitt's monitored pressure differential in Schmitt's mainline (503; Figure 5) to flow byproducts into Schmitt's second branchline (between 503 and 509; Figure 5) and maintaining the

pressure differential in Schmitt's mainline (503; Figure 5) within Schmitt's desired range by regulating the throttle valve, - claim 20

- vi. Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) of claim 20 wherein a throttling valve comprises Schmitt's first valve (505; Figure 5; column 6, line 7 - column 7, line 28), and wherein Schmitt's system (Figure 5; column 2, lines 15-35; column 6, line 7 - column 7, line 28) further comprises Schmitt's second valve (511; Figure 5; column 6, line 7 - column 7, line 28) in Schmitt's first branchline (between 503 and 507; Figure 5) upstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28) and a third valve in Schmitt's first branchline (between 503 and 507; Figure 5) downstream of Schmitt's first trap (501; Figure 5; column 6, line 7 - column 7, line 28), as claimed by claim 23

Aral teaches a wafer processing apparatus (Figure 1; column 3, line 34 - column 3, line 35) including exhaust control apparatus (Figure 4; column 6, line 13 - column 10, line 40) comprising a controller (Figure 4) for controlling a throttle valve (118; Figure 1) for controlling processing chamber pressure (column 2; lines 40-58) based on pressure differences (Equation 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Aral's exhaust control apparatus to Schmitt's system.

Motivation to add Aral's exhaust control apparatus to Schmitt's system is for controlling to Schmitt's reactor pressure as taught by Aral (column 1; lines 9-26). Further, it is well established that the duplication of parts is obvious (In re Harza , 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

Response to Arguments

3. Applicant's arguments with respect to claims 16-23 have been considered but are moot in view of the new grounds of rejection.

Conclusion

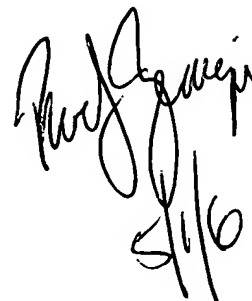
4. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to

Art Unit: 1763

the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

Handwritten signature of Parviz Hassanzadeh, dated 5/1/6.